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ADDRESS

OF

MAJ. GEN. GID. J. PILLOW,

DELIVERED BEFORE THE

MAURY COUNTY

Agricultural and Mechanical Society,

AT THE

FIRST ANNUAL FAIR,

OCTOBER 24TH, 1855.

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COLUMBIA, TENN.

PRINTED AT THE OFFICE OF THE DEMOCRATIC HERALD.  
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WOLFE, G. J. FELLOW,

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## ADDRESS.

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GENTLEMEN OF THE AGRICULTURAL AND MECHANICAL SOCIETY :

Having been requested by your Board of Directors to deliver an address at this your first Annual Fair, I cannot but regret that the duty thus imposed upon me, had not fallen upon some one better fitted for its performance. The reluctance with which I approach the duty thus assigned me, is not a little enhanced, from the conviction upon my mind, of the difficulty of producing any thing new, and of practical value, upon themes so little interesting to a general audience as those proper for such an occasion.

Identified, however, as I am, in *interest* and *pursuit* with the object of this association, and feeling a deep solicitude for the success of the great interests involved, I feel that, however inadequate I may be to a satisfactory discharge of this duty, I should, nevertheless, attempt its performance.

We live, my countrymen, in an age of wonderful achievements in the arts and sciences, and of their application to the useful purposes of life. We live in a country not less blessed by the fertility of the soil, and the salubrity of the climate, than by the political institutions which are rapidly developing the resources of this great confederacy of States, and elevating man to the true position of our race.

In such a country, blessed with such institutions, our mission is not less responsible, than is the duty difficult



of performance. The owners, in fee, of the soil we cultivate, exempt from the payment of *tithes* and *feudatory* dues, we have a direct and permanent interest in the preservation of our landed estates from exhaustion and deterioration, which does not exist in countries where the *sovereign* or feudatory lords hold the fee, and those who cultivate the soil are but tenants. As, therefore, we exhaust our lands we impoverish ourselves.

The people, too, being the source of all political power in this country, the Government being instituted for their benefit, and its policy shaped by their will, and to advance their happiness, these inestimable political blessings, enjoyed by no other people in the world, greatly enhance the value of the ownership of the great domain, and render its preservation from exhausting culture a duty second only to that of preserving our political institutions as the source of our civil rights.

Farmers and Mechanics of Maury County, such being the interest you have in the soil, such the political power you possess, and such the blessings our political institutions confer upon you, if you appreciate these, you are prepared to understand the importance of the interests involved in your association, and in the themes proper for this discourse. For these great interests I bespeak your attention.

I address myself to the agricultural and mechanical classes, because they are mutually dependant upon each other, and are the two great producing classes of society; and because the products of their labor create the material upon which commerce exists, and upon which all other classes subsist. The *primary* production of such material objects as are necessary to satisfy the wants of man, by culture of the earth, is the province of the agriculturist—their transformation, that of the mechanic and artizan—their distribution belongs to commerce, and yet, without the labor of the mechanic, neither the husbandman, nor commerce, to any extent, could exist.—

His skill constructs alike the implements of the agriculturist, and the ships of commerce.

How important is it, then, that such an aggregate of the labor of a class so important to society should be directed by education—aided by science—stimulated by honorable emulation—fostered by wise legislation, and sustained by the direct supply of all our own wants, from those mechanics whom circumstances have placed in our midst?

Hence, no act of our legislature—unimportant as it may at first seem—more entitles that body to the gratitude of the country, than that under which we are organized. By this law, the importance of your interest, and the justice of legislating for the benefit of the agricultural and mechanical classes of the great social family of the State, are distinctly recognized.

This is a beginning in the right place, and contemplates progress in the right direction, and though the appropriation is small, yet it is inaugurating a new system, deeply affecting your interest, and the prosperity of the country; and I must be allowed, therefore, to congratulate you and the country.

Let us meet the movement in the proper spirit, and indulge the hope that as the Government has recognized the justice of the policy, the small appropriation of the last legislature, will be followed by a law, giving adequate encouragement and aid, to stimulate to increased effort, and an improved system of agriculture and mechanic industry, alike beneficial to these great classes and to the country.

As we have shown that commerce exists on the products of the labor of these two classes, it may not be improper, before we enter more in detail into the considerations affecting their interests, that we should glance at what they have already done for the country—neglected as they have been heretofore by Governments.



England, being principally devoted to the arts and manufacturing, by the products of these, has long been the first commercial nation in the world. This importance she has attained, by a system of encouragement and protection of the great mechanic and manufacturing interests, and very much at the expense of her agricultural interest. But though the United States are yet in their infancy, and though these interests have received but little aid and encouragement from Governments, though the agricultural interests of the country have been almost totally neglected, yet so great has been the growth and development of these two great interests of the country, that they have already made our country the second commercial nation of the earth. We are now a close competitor of England for the first rank, and the day is close at hand when we will far outstrip her, and all others, in the commercial supremacy of the seas.

The total floating tonnage of the whole civilized world, excluding only China and the East, consists of about 136,000 vessels of 14,500,000 tons; of this total tonnage 9,768,172 belong to Great Britain and the United States, so that excluding these two great commercial nations, the total tonnage of the remainder of the civilized world is but 4,500,000, or less than that which either Great Britain or the United States individually possess. Even France, which comes next in the scale, is insignificant in comparison—its total tonnage being but 716,000 tons, against 5,043,270 for Great Britain, and 4,724,902 for the United States.

If these two great interests, the agricultural and mechanical, neglected as they have hitherto been by Governments, have already placed this country and its commerce so far in advance of all other nations, except that of England, how long would it be, if these interests were properly fostered and encouraged, before they would cause the commerce of this coun-



try even to double that of Great Britain? That it will be so within less than half a century, cannot be doubted by any one acquainted with the vast agricultural resources of this country, and the wonderful growth and development of our manufacturing and mechanic interests.

I allude to these statistics as having a direct connection with the two great classes represented by this Society, and for the purpose of illustrating the justice of the policy of the State, as adopted by the law under which we are organized into incorporated societies.

To exhibit the products of the industry and skill of these two pursuits, to compare opinions, and to embody the experience of those engaged in them, so as to advance still higher in the art of production, and the skill of fabrication, this society was organized; and this, its first Annual Fair, is to show your present position, and to furnish a standard by which to measure your future advancements, as well as to excite honorable emulation.

Having thus briefly sketched the nature and importance of the pursuits which this society represents, and how necessary and ennobling those pursuits—having shown that they have already elevated our country to the first rank as a great commercial nation, it will, at once, be seen that *in them* is to be found the great elements of national prosperity, as well as the surest *nursery of domestic virtue* and of *individual happiness*, and the road to *wealth* and *greatness*.

It remains now for me to consider the means best calculated to advance their interest, to point out errors in the system generally prevalent, and to call to their attention lights of science, and discoveries and inventions of arts, in aid of, and in amelioration of, these two great classes of the social family.

The great Architect of all that is—He who created all things, established laws by which all continue to exist.—

The law ordained for man's being, requires that by the sweat of his brow, shall he make his *bread*. This law of our being, requiring that we shall labor, is not a curse upon our race, but is a wise and merciful ordinance, as essential to a virtuous and happy life, as it is to our physical strength and health. Obedience to the ordinance carries with it not only moral blessings, such as virtue, temperance and freedom from all those vices and crimes incident to idleness, but it brings with it social position, wealth and the actual comforts of life.—How dignified and ennobling, then, the pursuit of those hardy sons of the soil, who cultivate the earth, and supply the wants of the countless millions of our race, who follow other departments of industry ?

How useful and honorable the industrious artizan and mechanic, who manufacture and fashion the products of the agriculturist, and the vast material abounding in the earth, with a skill equal to the diversified wants of our race ? How important is every measure which looks to the elevation of this great class, in moral and social position, in intellectual advancement and artistic skill ?

In our future remarks, looking to the best means of advancing the interest of these two classes, we shall treat them separately.

First, we shall consider agriculture—its origin—its present and future.

Every herb, plant, vegetable, fruit and tree was originally idigenous to some portion of the earth's surface ; but they did not all exist in any one clime or country. Hence, as our race multiplied and spread over the earth, and as its wants increased, it became necessary that they should carry with them, transplant, cultivate and acclimate, in their newly acquired country, those products essential to their comfort.



It is manifest, therefore, that in man's primitive condition, and in the first element of society, that he was an agriculturist, supplying his wants, and augmenting his comforts by tilling the earth.

In this way, we have advanced to the present enlightened age; but the progress has been so slow in agriculture, that, though the arts and sciences have advanced far beyond any thing known in the past history of the world, yet even here, in the United States, with a climate extending from the frozen regions of the North almost to the equator, and with a soil as diversified as our climate, we do not produce many articles of prime necessity, which our soil is capable of yielding, while the quantity of those we do produce could be greatly augmented by a better knowledge of the capabilities of our soil, of the principles of vegetable life, and of skill in their culture.

Here, then, we see that there is ample room for improvement, both by enlarging the field of production, and increasing the quantity of yield, of those articles which we already produce; but there is, perhaps, no department of industry where those who follow it, are so little acquainted with its laws, as are the practical agriculturists, of the component parts and nature of the soil, and the principles of vegetable life. In these respects, we are, practically, greatly behind the discoveries of science. These discoveries of science have been made, and published to the world, but the knowledge of them seems confined almost exclusively to those who follow scientific pursuits, while the practical farmer is left to the uncertain light, derived from his own short experience, and even this is lost in his successor. These discoveries of science, are but principles of philosophy—but truths of nature—are laws of production, within the reach of most of us, and are easily practicable when once

understood. "Agricultural chemistry teaches us the nature of the elements of the soil—its deficiencies—the means of correcting these deficiencies—the sustenance of the different plants, together with the proportions of the different elements of the soil that enter into the different species of vegetable life, and the proper application of manures or foreign stimulants necessary to increase the quantity and kind of yield." It will be seen, therefore, that this science is the handmaid of enlightened agriculture; and that a knowledge of this branch of science is as essential to enlightened and successful agriculture, as science can be, to any practical manual industry.

If a knowledge of these important scientific principles were possessed by all the farmers of Tennessee, so that their energy, industry and labor, were guided and shaped by them in cultivating the earth, in adopting the best system for increasing the yield, and in preserving and enriching their soil, who can doubt, but that the products of the soil would, in a few years, be doubled, and that, instead of exhausted and worn out fields, and a thriftless population, as we have in many parts of the State, we would have the most productive fields, and the most prosperous agricultural population in the world.

Why is it that our farmers are so ignorant of this branch of science, so important to their interests? I answer, it is because our colleges and universities have not introduced agricultural chemistry as a part of collegiate education. In other words, it results of the neglect of this great class of the country by the government of the State, in not having established this science as a necessary study of every public school in the State.

But to return to the duty before me, I will remark that *three things* are *essential* to all vegetable growth. These are,



first, *fertility of soil* ; second, *warmth* ; third, *moisture*. If any one of these conditions be wanting, success is impossible.—The warmth depends mainly upon the climate, the moisture upon the seasons. These *two*, we have in most parts of our highly favored country to an extent almost equal to our wants. But they will be wholly insufficient to insure success, without *fertility of soil*. Originally, our soil in this part of Middle Tennessee, was the finest primitive formation in the world. It possessed all those elements and chemical combinations of a fine productive soil in a higher degree than is to be found in the interior of any country on the continent ; but our system of culture is rapidly exhausting it of those *substances* so necessary to healthy and vigorous production, by extracting from it the alkaline salts upon which vegetable life mainly subsists, and unless we change the system, and avail ourselves of the lights which science has discovered, we shall, ere long, find our lands inadequate to subsist our rapidly increasing population. All vegetation is composed of a few earthy bases and gases in combination. Of the former, lime, soda, potash and magnesia are the principal—of the latter, carbon, oxygen, hydrogen and nitrogen are principal gases. These bases and gases combined chemically, are called, respectively, carbonate of lime—of soda—of potash, and of magnesia, and constitute what is meant by the salts of the earth, or more properly *alkaline bases*. Every species of vegetation known to exist, is composed mainly of these, not, however, in the same proportion. On the contrary, by a wise provision of the economy of nature, no two species of plants, or of vegetation, are composed of these elements in the same proportion, or in combination in the same degree. The different species of forest growth have these substances in different proportions, and so wheat, corn, cotton, hemp, tobacco, potatoes, peas, oats—in fine, every thing has these substances, or, more

properly, is composed of these substances in different proportions, but still in combination. To illustrate this, and the effect of the growth of different plants upon the earth, "suppose for example, a crop to require a peculiarly large supply of potash, it may grow well if the soil abound in potash, but if the soil be deficient in potash, and abound in lime, then this crop may scarcely grow at all upon it, while another crop, to which lime is especially necessary, may grow luxuriantly."

"If two crops of unlike kinds be sown together, their roots suck in the inorganic substances in different proportions—the one more potash and phosphoric acid perhaps, the other more lime and magnesia or silica. They thus interfere less with each other than plants of the same kind do, which require the same kind of food, in nearly the same proportions."

"Suppose the soil to contain a certain average supply of all those inorganic substances which plants require, and that the same crop is grown upon it for a long series of years; this crop will carry off some of these substances in larger proportion than others, so that, year by year, the quantity of those which are thus chiefly carried off will become relatively less. Thus, at length, the soil, for want of these substances, will be unable to produce this crop at all, though it may still contain a large store of the other inorganic substances, which the particular crop does not specially exhaust." It is upon this principle the benefit of a rotation of crops mainly depends.

It will be seen, therefore, that exhaustion may be *general*, arising from the gradual carrying off of all the kinds of food on which plants *live*; or *special*, arising from the wants of one or more of these substances, which the crops, which have long been grown upon it, have specially required. To repair the former kind of exhaustion, is equal to making a new soil, while to restore the latter, it may be sufficient to restore that substance of which the soil has been deprived by a con-



tinuous cultivation in the same crop. These are some of the principles taught us by agricultural chemistry. That they are *truths* of production, every practical farmer's own observation must satisfy him.

By chemical analysis it is ascertained that a large proportion of cotton is lime. By cultivating the same land through a series of years in cotton, the land would necessarily become so exhausted of its lime as to be incapable of the healthy growth of those plants, and this we all know to be the fact from experience ; and yet there will be left in the earth a good store of those other substances, as magnesia, potash, soda, &c., which are consumed in exceedingly small degree, by the cotton plants. Hence, land tired of cotton *ought* to produce good corn, and especially wheat, oats, or beans, which have very little lime in them.

Is not the truth of this fully proven by the experience of the whole cotton growing region of the Southern States ? As a matter of fact, we know that in the old cotton regions of Alabama, Mississippi and Louisiana, the continued cultivation of their lands in cotton—without sufficient rest, rotation or manure, has brought out legions of enemies, to prey upon this great staple.—The lice, when the plant is young and tender, the rust and blight in more advanced and vigorous growth, the cut-worm, the army-worm, the boll-worm, the bug-rot and the water-rot, all prey upon it, and often destroy the most promising crops. These are all different forms of disease brought on the plant for the want of the proper elements or substances for its healthy production, or for these in the proper proportions. Similar effects are produced in the State of Maryland, by tobacco—in Virginia, by tobacco and cotton—and in the Carolinas by cotton. The same thing may be seen in the effects of the continued cultivation of the same land for a long series of years in the peach, in New Jersey, where that fruit,

once the finest grown in the Union, and the staple of New Jersey, is becoming greatly deteriorated in quality, and rendered uncertain as a crop, owing to a disease called the *yellows*, to which the peach has, in late years, become subject, and to what is called the borer. A continuous crop of corn, wheat or oats will produce like effects, viz.: it will exhaust the earth of the substances that these crops live upon, to such an extent as to make it unsuited to their health, growth and development.

The same principle of growth, as a law of production, may be seen in the forest. If a pine forest die out or be cut down, it is almost universally followed by a young and vigorous growth of oak, and *vice versa*, if you cut down a forest mainly oak, the pine follows. This same principle may be seen in the coaling grounds of our iron furnaces, where the oak is followed by the chestnut, or the chestnut oak. Wherever any one species of forest timber greatly predominates, and has grown up to maturity, it has extracted so much of the alkaline bases that enter into the peculiar growth, that the land is unsuited to produce another forest growth of that particular species, though other growths, drawing other substances—other alkaline bases, or in different proportions, will immediately follow.

Having thus, as I conceive, established this great principle as a *law of production*—that is, having shown every species of crop has its different element, or, if the same elements, in different proportions, and that by cultivating the same field in the same crop for a series of years, we will so exhaust the land of the substances entering into that crop—having, I say, established this *great truth*, as a law of *production*, and of universal application to every species of vegetation, it furnishes the agriculturist with a *chart* and *compass*, by which to steer his course, and demonstrates the absolute necessity of conforming to this law, in order to avoid the fatal consequences of its violation.



A rotation of crops will ameliorate this evil; but with a rotation of crops there will be a slow, but gradual and certain, deterioration of your land. Subsoil ploughing, by which virgin soil is brought nearer the surface—by which the subsoil is loosened up so that the roots of the plants may penetrate deeper in search of the alkaline bases that enter into the growth—by which the water, of a wet season, may sink and pass off from the roots, and by which the roots can draw moisture from lower in the earth of a dry season—subsoil ploughing, which is beneficial in all these respects, will greatly increase the crops and help to put off the evil day of exhaustion; but subsoiling alone will not prevent deterioration of your land. Farmers must learn the great truth, that vegetation extracts from the earth its substances, and that these substances must be restored, if they would avoid deterioration more or less rapid, and that deterioration will, sooner or later, bring on exhaustion.

You must, therefore, adopt a system of *manuring*, and of fertilizing crops—such as wheat, clover, peas, &c. You must cease to tramp your fields through the winter, and burn off your corn and cotton stalks, grass and weeds. All dry vegetation retains the same earthy bases, (though in different proportion,) which enter into your crops of corn, cotton, wheat, &c. By ploughing in the corn and cotton stalks, you restore to the earth the very substances and in the exact proportions required for a new crop of corn or cotton. You must adopt horizontal ploughing, so as to prevent the rains from washing off the loose surface loam.

Let us in Tennessee, be admonished by the condition to which the old Atlantic States have been reduced, by the same system which we are pursuing, to change our system before our lands are exhausted, and we ourselves impoverished. To restore the sandy and worn out fields of Maryland, Virginia and the Carolinas, will require great labor and expenditure of

money. The march of the *restorer* is much slower than that of the *exhauster*. The *restorer* must have great *patience*, and must be content with small returns for large outlays. In these old States, effort is being made to retrieve the error of the past, and to restore their exhausted lands by the application of foreign manures, and by the gatherings of the barn-yards and the composts of their stables, and with the characteristic energy of our people, they will ultimately change their barren and waste fields to rich harvest and green pasturage; but these lands, by judicious culture, could have been kept productive for less than half the labor now required to restore them, while they would never have ceased to return full rewards to the husbandman.

If we do not all understand agricultural chemistry so as to be able to explain the sciences—chemical and physiological, which the several constituents of the soil render vegetation in the growth of the different staples of our country, we all, nevertheless, know that our lands are being exhausted and washed away—that the continued cultivation of the same land, in the same crop, without rest or change, destroys the power of the soil for the healthful production of that crop, and that, therefore, a change is necessary. We know that stable manures, lime, gypsum, marl and guano are fertilizers, and that these, with wheat, clover, peas, and subsoil ploughing, will prevent deterioration.

We all ought to know that as a manure, lime should be used in what is called its slacked condition. If *unslacked* its affinity for the carbon of the vegetable world is so powerful, that it will combine with the carbon, and thus take from the earth a most important element of vegetation, and instead of a benefit, it will be an injury. I have thrown these suggestions, as elementary truths, having practical value, to those who will apply them, and as calculated to



correct errors, almost every where prevalent in our system of farming.

In an age of steamboats and steam engines, of railroads and telegraphs, and of the application of these great discoveries to the useful pursuits of life, and the industrial arts, is it not strange that in agriculture, the most important of all, the least progress is made? While the world is going ahead, with a motive power which steam alone could produce, we alone are standing still; and, what is almost as wonderful, we seem scarcely conscious of the fact.

Even the improvements in the implements of husbandry, which we have adopted, are mostly made in other States, but in their use we are far behind our Northern neighbors. Their heresies in Religion and Politics I would not have you imitate; but their industry and skill in labor-saving machinery, and in their application to agricultural pursuits, I think, I may well commend to you. As a race, the people of the North are far from being lazy, but they show a wonderful "proclivity for dodging hard work." Steam-power, water-power, wind-power and horse-power are applied to the most menial as well as the most important pursuits of life. They use machinery for almost every purpose. They plant corn, sow grain, reap, mow, rake and thresh with machinery and horse-power. Such are some of the improvements our Northern neighbors have adopted as a means of overcoming natural obstacles, and to *supply the want of labor* in agricultural pursuits. Hence, you will perceive, that with them hard labor is becoming less and less direct in its application, not only to manufactures, but to agriculture, and it might, in time, become almost obsolete, were it not that the increase in the means of acquiring the comforts and luxuries of life, begets a corresponding increase in the demand for them. Yet, with all these improvements in agricultural implements, the Northern agriculturist *cannot* compete

with us in any one staple product. With them the winter is so long and cold, and the summer so short, that they can produce nothing but the hardiest vegetables and grains, while they have to shelter their stock and feed them on dry food from six to eight months in the year. Even wheat—their great staple—properly put in, the crop is as certain with us as with them. The yield is as heavy as theirs, while our wheat has 5 per cent. less water, and 5 per cent. more gluten, and will turn out 20 per cent. more flour per bushel, than theirs. When we add to these considerations, the fact that our crop comes into the market from six weeks to two months earlier, enabling us always to supply the opening markets, and when in direct competition, ours commands 25 per cent. better prices, (because of its additional dryness and less liability to damage in transportation to a foreign market,) you perceive that our advantages are at once *decisive*.

In the growth of stock, we have advantages equally decisive. Our growing seasons are long, the grasses abundant and the climate so mild that shelters are unnecessary, while we are several hundred miles nearer the great stock market. In the production of cotton, sugar, tobacco and rice, and all those delicious fruits and vegetables requiring a genial sun for their production, we have a perpetual monopoly. But notwithstanding all these disadvantages, the Northern farmer makes a good living. In rigid economy, in the use of labor-saving machinery and the improvements in agricultural implements, he finds compensation for the natural obstacles to success, in a cold climate and short seasons.

In some portions of Middle Tennessee, the cultivation of cotton is the main reliance of the farmers. That cotton may be grown here does not admit of a doubt, but that it can be *profitably* grown, when we take into the estimate, the great



value of our lands, and the deteriorating effects of the crop upon those lands, I controvert.

It should be borne in mind that cotton was originally a tropical production, and that there, it was indigenous and is perennial. But it is, in my judgment, an *error* to suppose it may be grown here as a *main reliance*. This *error* grows out of the fact that cotton may be profitably grown *in this latitude*, in the Mississippi alluvial bottoms and in the coast lands of the Eastern Atlantic. Those who reason thus, have failed to take into the account the effect of elevation or depression in modifying climate. Elevation lowers climate, while depression elevates it.

The most accurate scientific test of this influence is, that 20 feet of depression is equal to one degree of latitude south, upon the same uniform plain. Hence, we see, within the tropics, and almost under a vertical sun, at an elevation of about 16,000 feet above the level of the sea, the mountains are covered with perpetual snow, while on the sea coast at the base of those mountains, there is almost furnace heat.

Our position in Maury County is known to be between five and six hundred feet above the level of the alluvial lands of the Mississippi bottom, and eight hundred or one thousand feet above the sea coast of the Atlantic, in the same latitude. In addition to this, the amount of sand in the soil of the Atlantic coast lands, and the Mississippi alluvials, greatly increases the warmth of those lands, and is, therefore, a much nearer approach to the climate congenial to the production of cotton.

The staple products of Middle Tennessee should be corn, wheat, oats, grass and live stock. In live stock, Tennessee is now the first State in the Union; in corn about the sixth; in wheat about the fifth; and in domestic manufactures the first, while she is fifth in population. Under a proper system, the extent and fertility of our soil, the mildness of our climate,

with the industry and energy of our people, would make her first in all these products.

Let the people of Tennessee change their system—resuscitate their lands—adopt labor-saving machinery—build up manufactures, and apply thereto our fine water-power, and, with their surplus labor, manufacture their own clothing and implements of husbandry—let them extend their Railroad system, and develop their mineral resources—let them but do this, and there never lived a happier or a more prosperous people. The impulses of self-interest should prompt this course ; but the instincts of self-preservation may soon demand it, and the sooner they adopt it, the firmer position they may take in maintaining their rights, and the more will those rights be respected.

In approaching the subject of the mechanic arts, the field is so boundless in extent, and so rich in the evidences of the inventive genius of our people, that it is difficult to determine what branches of mechanic industry are proper for consideration in this discourse. Rapid as have been the advances of science, in discovering the truths of philosophy, the mechanic arts have kept pace with these, and as new principles have been discovered, means have been found—instruments constructed—to apply the new principle to some purpose of life.

The discovery that the electricity of the thunder storm was identical with that generated upon the galvanic battery, was but ascertaining a principle of philosophy. Now, that wild, *flashing, blasting* element of the atmosphere, is made *useful* to man by its instrumentality as a flying agent, between remote points of communication. By the electro-magnetic telegraph, we are enabled to converse with those a thousand miles from us.

The world could not have been ignorant, from its creation to the days of Fulton, of the great elastic power of steam ; but the application of this wonderful power, to the useful purpo-



ses of life, was reserved for the discoveries of modern minds, and for the skill of modern mechanics.

Indeed, the age in which we live is eminently *utilitarian*. This is its *characteristic*. In the late world's exhibition in London, and in a similar exhibition, now in progress in Paris, the great mechanic shop of the fine arts of the world, American genius and mechanic skill, in the *utilitarian* departments, is astonishing all Europe, and carrying the highest honors. It was but the other day, that the Emperor of Russia selected one of our mechanics from a village shop of a neighboring State, and placed him at the head of the engineer department of the navy of that great Empire.

Within the past season, the two great powers of Europe have sent distinguished officers to this country, to examine the government armories, and our machinery for constructing arms, while at this very hour, another American has in full operation extensive factories in Russia and England for supplying their armies with arms. These facts constitute the highest encomiums that could be passed, upon the skill, inventive genius and ingenuity of American mechanics.

In Tennessee we are behind many of our northern and some of our southern States, in almost every branch of mechanics and manufactures. Until within the last 20 years, we have been almost exclusively an agricultural people. We now have many and extensive manufacturing establishments of iron and cotton, and these are now important and leading interests in the State, and with the additional capital constantly seeking investment in them, Tennessee will soon take position with the first rank of States. As a branch of one of these interests, iron manufacturing machine shops are springing up in many parts of the State, the effect of which will soon be seen and felt in every part of the country. Those capitalists who do most to

introduce and develop these great interests are patriots, and entitled to the thanks and gratitude of the country.

Another important branch of mechanics, of recent introduction among us, is the manufacture of every species of carriage. The speaker thinks he has enjoyed the opportunity of seeing in the Eastern cities and older States, as fine articles as are manufactured in the United States, and he is satisfied that no better article is any where manufactured than in Tennessee. In strength of structure, in style of model, and in beauty, and elegance of finish, nothing can surpass those made by our own mechanics in Columbia.

The manufacturing of heavy woollen jeans and linsey, and cotton osnaburgs, suitable for clothing for our slaves, has been introduced with a degree of success and profit far exceeding the anticipations of the most sanguine friends. So, too, the manufacture of heavy brogan shoes, which will soon, it is hoped, supply our home demand, promises to do well.

Many other branches of manufactures and mechanics, are rapidly growing up in the State, and are becoming important elements in the general prosperity of the State, and our vast mineral stores of iron and copper, which are being largely worked, will soon enable Tennessee to declare her independence; and if our people will only act wisely, and encourage our own mechanics by supplying all their wants as far as possible at home, the dawn of a brighter day will, at once, break upon our vision.

Agriculture and mechanics, being dependent upon each other, will find increased prosperity in mutual support. The mechanic arts, as I have already stated, are greatly in advance of agriculture, in availing itself of the discoveries of sciences. It however needs, and should receive, the fostering care of government, not in protecting it by *impost* duties, but in developing its skill, and in bracing it up, and



supporting it in its conflict with capital, as well as in elevating it in *moral* and *social* position in the great social family. Every thing which government can rightfully do, ought to be done, to give intelligence, moral worth and social position to the mechanic element of society.

In governments having permanent *castes* in society, the mechanic is excluded from high social position, but with ours, his rights and privileges being equal to those of the most favored classes, he should be fitted for the highest position, to which, by the principles of our government, he may be called. It is our boast that our legislative halls, State and national, the senate chamber, and the State and federal Executives, are alike open to all. With us, it is not the pursuit that confers distinction. Every occupation is respected, and the social position depends mainly upon the moral worth, intelligence and usefulness of those who follow the mechanic pursuits, without regard to the occupation itself.

Need I mention the names of Franklin, of Fulton, Arkwright, Cartwright, Morse and a thousand others, whose fame reflects honor upon their professions and country?

To the mechanics themselves, I would say, respect yourselves, respect your calling and you will thus become the means of your own advancement. Educate your sons, teach them the dignity of labor, not only in the use of tools, but in the physical sciences and mechanics, and in all knowledge necessary in every branch of mechanics, and you thus qualify them for every branch of human industry, and these will command social position. It is the want of education and general information, more than all other things, which you feel. Such I know to be the opinion of all sensible and intelligent men in this country, of the con-

siderations which control the public estimate of your character and social position in the great American family.

There is one thing in the policy of the State, of which the mechanics have a right to complain. While they have asked no special favors of the State, they have a right to expect that no policy will be adopted, injuriously affecting the fair rewards of their labor, or calculated to degrade them.

In both these respects, I conceive that the policy of the State, in its penal code, has done them great injustice. Misplaced philanthropy and visionary theories of reform, it seems to me, have blinded the legislature of the State, to a sense of what is due to the great mechanic element of the State.

We have heard strong appeals made to the country against foreign pauper labor competing with home industry, while the State has itself built up and put in operation a mammoth *mechanic shop*, which it is carrying on with the labor of *convict-felons*, and is bringing the fruits of this labor in direct competition with that of the honest, moral, hard-working mechanics of the State. She catches those who violate her laws and the peace of society—the thief, the burglar, the murderer—she establishes their guilt as felons, her courts of record pronounce them *infamous*, and they are then sent to the State mechanic shop, as apprentices, to learn a trade, and in the course of a few years, are turned out, *graduated* mechanics, to associate with the families of the honest and industrious and moral mechanics of the State, or to go back to their old haunts of vice and crime.

Are these *convict-felon mechanics* fit associates for the honest mechanics and their families? Does not the asso-



ciation necessarily degrade and lower the moral and social position of the great mechanic family of the State? A system so fraught with evil, so degrading to a great and useful portion of society, should not be tolerated by any people, much less should it be introduced and fostered by a government looking to the elevation of society and the happiness of our race. It is the first and paramount duty of the legislature so to change this system as to remedy the great moral wrong. This can be done by changing the pursuits of the convicts to some species of manufacturing which does not belong properly to the mechanic pursuits of the State.

If that be not possible, let the system of *solitary confinement* and *religious instruction* be substituted for the present. If it be objected that such a change would make the Penitentiary a tax upon the State, let it be so. Society must be protected against crime, and, if to do this, the people must be taxed, it is a necessary tax, and it is infinitely better for the whole country to be lightly taxed, than that a great and useful class should be injured in their means of living, and degraded to the condition of *convict-felons*. Punish the guilty as you will, but do not punish the innocent also. Protect society, but not by *starving* and *demoralizing* a large and useful class.

If it be said, that the consideration of the policy of the State, in her penal code, does not belong to the duties of the speaker on this occasion, and that, therefore, these remarks are out of place, my reply is, that the State has authorized the organization of Agricultural and Mechanical Societies for the promotion of the interests of the two great classes in all that relates to their well-being and advancement, and that when I see a policy of State, calculated by its direct and certain tendency, to degrade and demoralize

one of these classes, it is my duty to call public attention to the subject. Were I to fail to do so, I should feel that I had but half performed my duty to those whose honored organ I am on this occasion. Let the mechanics of Tennessee be prudent, be firm, be united, and demand emancipation from this odious system, and sooner or later a just public opinion will relieve them. Above all, let them be true to themselves, and indignantly spurn association with those *convict-felon mechanics*. Let them be true to their country, which confers such countless blessings upon them, and recognizes no distinctions in society, except such as are founded in moral worth, intelligence and virtue.

I have thus hastily glanced at the great interests involved in the cause of your association—how imperfectly, none know better than myself. My object has not been to please by flattering your pride, but to speak the truth as I understand it. I have sought to point out error where it existed, and to bring to your assistance the lights of science as aids to your advancement, but I have held forth no *false lights* to *beguile* you from the safe track into the fields of visionary experiments.

I would that I could induce you to push forward, with energy and courage, in search of the great truths already placed within your reach by the discoveries of this wonderful age. If my remarks shall induce earnest enquiry, and excite among you honorable emulation to excel in the two great and ennobling pursuits which you claim as your own, my task will not have been performed in vain.









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